3-1 Milestone Two: Enhancement One - Software Design and Engineering

Larry McCoy

Prof. Brooke

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Southern New Hampshire University

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First off was to use the initial code artifacts to help establish the base set of requirements to be used as a guide for preparing the Software Development effort in the JavaScript language. From this I was able to create the Requirements Traceability Document along with the Functional Model diagram to show a mapping for the initial use case development. This excel spreadsheet will continue to grow as we move forward in the code development by helping to identify the Structural Model and Behavioral Sequence Diagram Models that will lead us into successful code development that will allow us to meet the identified requirements.

The Requirements Traceability Document, first created artifact for this functionality, shows the Non-Functional requirements and Security requirements that will enforce the standards allowing access to the system by the proper user. Once access is validated there are three functional blocks of requirements that are addressed to help create and fulfill the desired use cases of the system. The first is to Provide the ability to maintain the base Animal Shelter Record, these include the vital attributes to store the Animal Record data. The next set of requirements drawn from the Animal Shelter Records allow us to execute the CRUD functionality within the existing code. To fulfill the requirements of providing available animals in the system, the read functionality is going to allow the user to provide a listing of identified animals base on record read.

The second aspect of the design phase is to meet the requirement to identify specific animals that meet the desired needs associated with providing service animals. These requirements allow for retrieving the animal records available through a filtered search technique base their breed. In this section of the traceability document, there is the capabilities requirements and the ability to create the breed records that will be used to identify animals that meet those capabilities. All the requirements listed will now be applied to the Use Case mapping provided in the Functional Model Diagram.

This diagram can be seen in provided PDF document and shows how an external user can gain access to the system to execute the CRUD operations associated with the Animal Shelter Record that is extended though a query function to retrieve the records. The user is also able to add new breeds of animals that can meet the desired capabilities of requested services for animals that are stored in the system. These records are extended a filtering function that will provide a website location of animal records that fit the desired capabilities filter.

Then next step is to develop the Structural Model and allow us to create the data objects that will be implemented in the JavaScript software development phase. From here we will be able to build the sequence diagram that will assist with the code base flow and allow that program to become executable and applicable to the desired needs of the user.